FACT SHEET

Monitoring at Chemical Agent Disposal Facilities

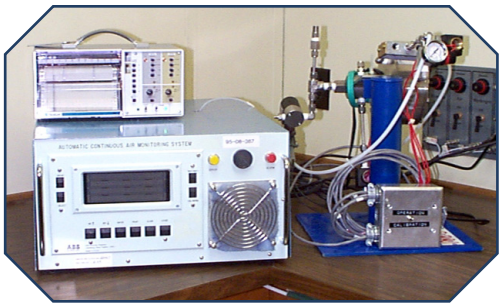
The largest concern in the disposal of chemical agent and weapons is the potential release of chemical agent. To protect the workers, the public and the environment, the disposal facility is monitored in several ways to ensure that there is early notification in the case of release of chemical agent to avoid health risks.

Monitors used in the disposal facility are extremely sensitive and can detect agent concentrations at very low levels—alarming and giving workers time to mask and safely exit the area. There are different types of monitoring equipment to measure different ways in which the presence of chemical agent can be identified:

- Near-real-time monitors, such as the Automatic Continuous Air Monitoring System and the MINICAMS®
- Back-up historical monitors, such as the Depot Area Air Monitoring System.

Automatic Continuous Air Monitoring System

The near-real-time monitors are automatic, continuous air monitors that sample air for four minutes, then analyze the sample and display the results. They use a process,



Automatic Continuous Air Monitoring System

called gas chromatography, which separates compounds in the air samples to detect and report levels of chemical agents. These monitors are able to detect extremely low levels of chemical agent. If they detect any amount of agent present exceeding allowable levels, then remote, audible, and visual alarms are set off.

Depot Area Monitoring System

Back-up historical monitors, or the Depot Area Air Monitoring System, also continually sample the air for chemical agent by drawing the air through special glass tubes and trapping any chemical agent in a special material. The sampling times vary from every few minutes to 12 hours. The tubes are collected and a laboratory analysis can provide confirmation of agent readings from the near-real-time monitors

MINICAMS®

or provide a historical record of monitoring for areas not monitored by near-real-time monitors.

To reduce the number of false alarms and to ensure monitors work properly, near-real-time monitors are tested at least once a day. They are tested with diluted agent and must alarm showing the correct level of agent, or they are repaired or replaced. To ensure the safety of the public and the environment, monitors on the common exhaust stack for the furnaces are tested every four hours. A routine inspection and quality check is used to confirm that DAAMS stations are working properly. Quality control samples are also used to ensure that laboratory analysis of the DAAMS tubes is accurate.

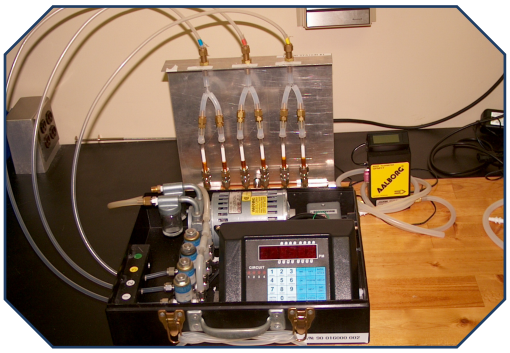
Monitoring stations are placed throughout disposal plant facilities in all process rooms, observation corridors, chemical agent munitions receiving areas, drain stations, neutralization bays, furnace ducts and the common exhaust stack for the furnace. As an added safety measure, monitors also are in the heating, ventilation and air conditioning system exhaust stack and filters. In all, there are close to 250 monitors that report conditions throughout each facility that uses incineration and 70 monitors throughout each neutralization facility.

For more information, contact the Public Outreach and Information Office of the Chemical Materials Agency (Provisional) **1(800) 488-0648** or **www.cma.army.mil**

OVER

Monitoring at Chemical Agent Disposal Facilities (continued)

A permanent record of the readings from the monitors for agent levels is recorded. The monitors can be set to detect three different



Depot Area Air Monitoring System

chemical agents (nerve agents GB and VX, and mustard agent HD). While each monitor can detect only one type of agent, multiple monitors can be set for different agents to be monitored at the same time in the same area.

Monitoring for Substances Other Than Chemical Agent

Monitors for substances other than chemical agent are used at the disposal facilities including Continuous Emission Monitoring Systems and Total Hydrocarbon Analyzers.

Continuous Emissions Monitoring Systems are used on the furnace ducts and the common exhaust stack at incineration disposal facilities to monitor levels of carbon monoxide, carbon dioxide, nitric oxide, oxygen and sulfur dioxide. They ensure efficient processing and emission compliance with environmental permits and regulations. Continuous Emissions Monitoring Systems are regularly tested to ensure they work properly. If these alarms are triggered, the automated systems shut down the facility to avoid unacceptable emissions.

Total Hydrocarbon Analyzers are used at neutralization disposal facilities. The analyzers are located in the ventilation ducts and stacks and monitor for organic compounds produced in the neutralization process and are typically regulated by state environmental statutes. Like the Continuous Emission Monitoring Systems, the Total Hydrocarbon Analyzers help ensure efficient processing. Total Hydrocarbon Analyzers are tested and inspected regularly to ensure they are working properly.

Though monitoring technology currently used at the chemical weapons disposal facilities was developed decades ago, it remains the best technology available because the newer technologies do not monitor as accurately at the required low detection levels. The Army does have an active program to test new monitoring technologies for disposal facilities. In order to ensure the safety of its workers, the public and the environment, the Army will use the best available technology at all of its disposal sites.

Oversight and Health Standards

There are several independent groups and agencies that oversee and help the Army with chemical agent and weapons monitoring. These groups include the U.S. Department of Health and Human Services' Centers for Disease Control, the National Academy of Science's National Research Council, state regulatory agencies and scientific and technical experts from industry. These groups ensure that the Army is using the best monitoring technology and processes.

Monitoring at chemical weapons disposal facilities ensures that safety and regulatory requirements are met. However, the most important reason for monitoring is to protect the workers, the public and the environment while safely disposing of the nation's stockpile of chemical weapons.

Interferents

Some ordinary substances such as diesel fumes or perfume can cause the monitors to alarm. Initially, all agent alarms are treated as real until laboratory analysis of air samples from the DAAMS determines the presence or absence of chemical agent.